

If we are going to live so intimately with these chemicals—eating and drinking them, taking them into the very marrow of our bones—we had better know something about their power.

Rachel Carson
Silent Spring (1962)

CANCER

Save Our (Young) Skins!

Traditionally an adult disease, melanoma—the deadliest form of skin cancer—is on the rise in both children and adults around the world. In the United States, the overall rate of increase across the population was 2.8% per year between 1981 and 2001, according to data from the National Cancer Institute's Survey of Epidemiology and End Results. People under age 20, a group in which melanoma is rare, have faced an overall 1.1% annual increase in disease incidence over the same period. But the rate among 10- to 24-year-olds has increased by 3.0%, according to research in the 20 July 2005 issue of the *Journal of Clinical Oncology*.

Julie Lange, an assistant professor of surgery and oncology at Johns Hopkins University School of Medicine in Baltimore, says, "Part of the apparent rise may be that cases ten or twenty years ago were not as likely to be reported to a tumor registry." Reporting is more complete today, she says, and in some areas outpatient cases are now routinely reported along with inpatient cases. Improved reporting methods are not the whole story, though. "The incidence probably truly is increasing—it's a fairly consistent finding," Lange says.

Melanoma in children occurs so rarely that annual rate increases are measured in fractions of cases per million, so relatively small numbers of new cases can produce substantial percent changes in incidence. "From a public health burden point of view, saying it has increased from five cases to six cases per million children over a decade is more appropriate," explains Ahmedin Jemal, the American Cancer Society's program director for cancer occurrence.

The picture across the full human population is complex. "What we are seeing in adults, at least in Australia, is that amongst the older generation, their rates of melanoma are still climbing. We're seeing the effects of their sun exposure fifty, sixty, seventy years ago," says David Whiteman, a senior research fellow at the Queensland

Institute of Medical Research in Brisbane, Australia. Increased attention to sun exposure seems to be working. "Amongst the younger [adult] cohort—the under-fifties and particularly the under-forties and younger—we're seeing that their rates of melanoma are not as high as previous birth cohorts at the same age."

Sun exposure and experience of blistering sunburns have been identified as important risk factors for adult melanoma. "Because we believe that UV exposure increases melanoma risk in adults, we are



Burning youth. Despite better awareness of the risks of sun exposure, melanoma is climbing among young people, a heretofore largely unaffected group.

assuming that the same is true for children—whether there are other important factors for kids today, no one knows," Lange says.

Whiteman's group did a case-control study of childhood melanoma in Queensland in the 1990s to look for other such factors. "We were very interested in . . . exposure to pesticides, exposure to other chemicals, other environmental factors," he says, "but we really found no differences

in [those] exposures." The group did find, however, that children with melanoma had more large noncancerous moles, heavier facial freckling, and less ability to tan compared to children without melanoma; they were also more likely to have a family history of the disease. These findings appeared in the January 1997 issue of the *International Journal of Cancer*.

Factors not yet investigated may also play a role. The Harvard Nurses' Health Study, a long-term prospective study of risk factors for chronic diseases in women,

has shown an association between orange juice consumption and melanoma in adult females. The investigators hypothesize that a photosensitizing compound in oranges may contribute to risk, says Diane Feskanich, an assistant professor of medicine at Harvard and an investigator on the study. However, a parallel study in men, not yet published, did not find the same strong association. "Whether there are photosensitizing foods is an open question," she says. "Certainly there are drugs that warn you 'don't go out in the sun if you're taking this.'"

Awareness of the risks of sun exposure has improved, according to Lange. "The population in general is more aware today of the potential danger from the sun than twenty or thirty or forty years ago," she says. The same is true in Australia, which has among the world's highest incidence of the disease. "The current generations of children are probably getting less sun exposure and fewer episodes of sunburn," says Whiteman.

But better awareness of the major risks has not necessarily translated into complete protection of children. Even grasping the extent of older children's

exposure to the best-known risk factor, UV light, can be difficult. Despite prevention messages, many teenagers and young adults still want suntans. "The use of indoor tanning facilities is common among teenagers," Lange says (in a 2003 survey, 47% of white girls aged 18 or 19 had used tanning beds three or more times). "Teenagers practice a lot of risky behaviors, and exposure to UV light is one of those behaviors." —Victoria McGovern

CHILDREN'S HEALTH

Child Survival Gets TV Boost

A recently launched campaign known as Rx for Child Survival gets into top gear 1–3 November 2005 with the help of a six-part TV series on global health narrated by actor Brad Pitt. The series, *Rx for Survival—A Global Health Challenge*, which was produced by WGBH/NOVA Science Unit and Vulcan Productions and will be aired by PBS stations nationwide, aims to help Americans better understand global health problems. The series also highlights the plight of children under age

Merck Company Foundation, the campaign's goal is not just to inform but also to encourage Americans to donate and raise money for public health interventions in the world's poorest countries. Some 88 cents of every dollar raised will be spent in the field to provide vaccines against measles and tetanus, insecticide-treated netting to prevent malaria, vitamin supplementation, oral rehydration packs for diarrhea (which kills 1–4 million children per year), antibiotics, and anti-malarial agents.

The actual field work will be performed by CARE and Save the Children, humanitarian organizations with delivery infrastructures already in place. The initial recipient countries will be Afghanistan,



Hope for better things. The Rx for Child Survival campaign is a bid to better child health worldwide using simple tools such as insecticide-treated netting to combat malaria-bearing mosquitoes.

5, of whom more than 6 million die every year in the developing world from diseases that could be prevented or treated for just a few dollars.

The TV series is part of a multimedia project that also includes the efforts of *Time* magazine, Penguin Press, NPR, and an interactive website (<http://www.pbs.org/wgbh/rxforsurvival/campaign/index.html>). Says Paula Apsell, senior executive producer for WGBH/NOVA, "With the power of television to extend our message into eighty-six million living rooms each week, one of the most visited dot-org websites in the world, the local reach of three hundred forty-eight member stations across the U.S., and a far-reaching impact campaign forged on the precept of partnership, PBS is in a unique position to help Americans learn more about the world's most pressing issues and to show them ways to do more to make the world a better place."

With funds initially provided by the Bill & Melinda Gates Foundation and The

Mali, Mozambique, Nepal, Nicaragua, Sierra Leone, and Vietnam.

"Simple and affordable tools exist to save six million young lives lost each year from preventable causes like diarrhea and pneumonia. But these tools are not reaching the children who need them most," says Charles McCormack, CEO of Save the Children. This is because humanitarian groups cannot afford to buy and distribute them. "Through Rx for Child Survival, Americans can help these children survive and thrive," says McCormack.

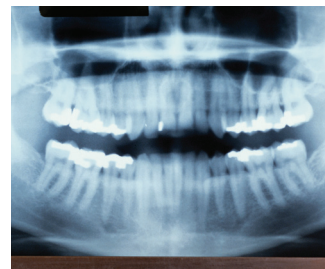
Why another fundraising initiative? The answer is simple, says Jorge Alvar, head of the World Health Organization Department of Communicable Disease Control: "Children are dying, and we can prevent much of this tragedy at just a few dollars per head. This campaign, which aims to inform and mobilize Americans—citizens of the world's richest nation—could be of great help in that task." —**Adrian Burton**

Mercury's Afterlife?

A report released by the New England Zero Mercury Campaign says that dental fillings in cremated corpses emit about 2.5 tons of mercury each year, with the amount expected to double by 2025.

Dental amalgams are 50% mercury by weight. Although the use of mercury-containing amalgams is declining steadily, 34 tons of mercury are still used for dental purposes each year. The EPA has met with the American Dental Association to discuss ways to further reduce the use of mercury in fillings.

More people today die with some or all of their teeth in place. In addition, more people are choosing cremation. The April 2005 report is online at http://www.cleanwateraction.org/mercury/pdf/NEZMC_ReportCard_DentalMercury.pdf.



Climate Change Hits the Road

Cities are the biggest consumers of electricity and therefore the primary generators of the greenhouse gases that cause global warming. Now the British Council, Great Britain's international agency for promoting education and cultural relations, has launched its US\$7-million two-year ZeroCarbonCity campaign to educate people in 100 cities across 60 countries about climate change. The campaign, begun in March 2005, teaches how decisions at all levels, from urban planning to personal choices people can make every day, can contribute to or help mitigate the effects of climate change. A traveling photographic exhibition is visiting all 100 cities as part of the campaign. Related debate transcripts and publications are available online at <http://www.britishcouncil.org/zerocarboncity.htm?mtk=8>.

Personal Products Keep Organic Label

People who prefer to buy organic cosmetics, dietary supplements, and pet food can breathe a sigh of relief—in August 2005, the USDA ruled that the use of the "USDA Organic" label is permissible on those products. The ruling reverses an earlier decision that putting the green and white label on such items went beyond the original intent of the labeling program, implemented in 2002. Following the original ruling, the Dr. Bronner's Magic Soaps organic body care company and the Organic Consumers Association filed a suit against the USDA, a move seen as the leading factor behind the reversal.



GENOMICS

HapMap Complete

The International HapMap Project, a consortium of researchers and funding agencies from the United States, Japan, China, Nigeria, Canada, and the United Kingdom, is set to release a dramatically enhanced version of its haplotype map. The newly revised HapMap will be formally introduced on 26 October 2005 at the annual meeting of the American Society of Human Genetics in Salt Lake City. This information will provide researchers with an effective shortcut to map the genes contributing to particular diseases and drug responses.

The HapMap currently characterizes a total of 4 million common DNA sequence variants known as single-nucleotide polymorphisms (SNPs). With the HapMap, scientists are better able to investigate the genetic components of many complex disorders, such as asthma, cancer, and obesity. Mark Daly, an associate member of the Broad Institute, a research collabora-

tion of universities, research centers, and hospitals in Cambridge, Massachusetts, says the HapMap shows where common SNPs are located on human DNA, and how they are distributed among populations in different parts of the world. "The HapMap allows us to accelerate our understanding of genetic variation and its relationship to disease," he says.

Most SNPs are inherited in blocks, or haplotypes, on the chromosome. Each haplotype typically carries "tag" SNPs that characterize the haplotype as a whole and thus can be used to predict the identity of the other SNPs in the same block. For example, if researchers found that a certain tag SNP showed up consistently in studies of bipolar disorder, that tag could provide some indication of the other nearby SNPs on the chromosome—SNPs that may act in concert to exert some effect on the individual phenotype. Researchers can then look more closely at those neighboring SNPs to see whether and how they contribute to a given disease. The HapMap

project has identified 250,000–400,000 such tag SNPs.

Phase I of the project, which was completed in March 2005, characterized 1 million SNPs in the genomes of 269 individuals from four sampled populations: the Yoruba people of Nigeria, Han Chinese from Beijing, Japanese people from Tokyo, and a group in Utah with ancestry from Western and Northern Europe.

In Phase II, the HapMap increased the SNP density characterization in these populations to 4 million. According to Daly, this expanded number encompasses the vast majority of common SNPs thought to exist in human beings.

Lisa Brooks, program director of the Genetic Variation Program at the National Human Genome Research Institute, says that researchers will seek to validate the current HapMap's findings in additional populations, including African Americans, Mexican Americans, and others. "Phase II has given us a better genomewide HapMap," she explains. "This is a wonderful resource for mapping genes affecting complex diseases." —**Charles W. Schmidt**

LEGISLATION

NYC Adopts Pesticide Laws

In response to the growing evidence that chemical pesticide use has potential human health consequences, New York City has adopted two new laws that aim to reduce exposures to toxic pesticides. The pesticide phase-out under these laws, signed in May 2005, will be complete by November 2006.

Under the NYC Pesticide Reduction Law, city agencies and their contractors must phase out the use on city property of pesticides that are known or suspected to cause cancer or developmental effects, and must adopt less toxic alternatives for pest control. Under the Neighbor Notification Law, the city must opt into a state law requiring that commercial lawn pesticide applicators provide 48 hours' advance notice to adjacent neighbors before spraying pesticides on lawns, trees, and shrubs.

"These bills put New York City at the forefront of the national effort to move pest control in a new direction, away from poisons and towards prevention," says Laura Haight, senior environmental associate at the New York Public Interest Research Group, one of the organizations that spearheaded community-based campaigns for the laws.

Pesticides are extensively used in densely populated cities. Cockroaches, mice, and rats thrive in multifamily dwellings, where excessive moisture, structural cracks and crevices, abundant food sources, crowded apartments, and overstuffed closets provide nutrition and shelter for pests. In the New York City metropolitan area—which in the late 1990s accounted for more than a quarter of the total pesticide use in the state—these conditions are magnified by the sheer size of the urban center, where more than 8 million people live in 800 square kilometers.



"One of the most important potential effects from both laws may be the reduction of exposures to pesticides in schoolchildren," says Claire Barnett, executive director of the Healthy Schools Network, an advocacy organization that helped push the laws through. It is expected that these laws could potentially reduce exposure to pesticides for over 1 million children in the city's 1,500 public schools, as well as hundreds of thousands of other residents.

What made the NYC Pesticide Reduction Law feasible is that there are effective alternatives to pesticide use, says Barbara Brenner, principal investigator of an NIEHS-funded study at the Center for Children's Environmental Health and Disease Prevention Research at Mount Sinai School of Medicine. Data published by Brenner's group in the October 2003 *EHP* showed that reducing the breeding habitats for pests and using agents like boric acid that are non-toxic to humans effectively reduced cockroach infestation in an inner-city environment.

Says Brenner, "Cockroach, mouse, and rat infestation is a very real and serious problem in both indoor and outdoor environments throughout New York City. . . . However, traditional chemical pesticide spraying has not controlled the problem, bringing with it health risks and hazards of its own. Recognition of this dilemma by New York City government represents official recognition of both the problem and the need to now use proven least-toxic methods."

City council member James Gennaro, who cosponsored both bills, says, "The active participation of community organizations and scientists were both vital to the success of this landmark legislation. . . . Frankly, I don't believe this legislation would be law today without the involvement of these two essential groups." He adds, "I firmly believe that this legislation will have tangible health benefits for large numbers of New York City residents." —**Luz Claudio**

ehpnet

The Endocrine Society and the Society for Endocrinology

The endocrine system encompasses the thyroid gland, the hypothalamus, the pancreas, the adrenal cortex, the thyroid, the parathyroid, and the male and female reproductive glands. Two large and well-established societies, The Endocrine Society and the Society for Endocrinology, serve the practitioners of this field. Both groups have established websites to keep their members and the general public aware of newsworthy events and developments in the field, and to educate those laypeople wishing to learn more about the subject.

The site of The Endocrine Society, <http://www.endo-society.org/>, features quick links so that information and materials can be pulled up by either subject or visitor's role (e.g., clinician, student, volunteer worker). Among the 16 subjects featured are cardiovascular function, diabetes/insulin, genetics/genomics, male reproduction, and female reproduction. Also gathered in one area of the homepage are quick links to the society's five publications, membership information, a member directory, and a subscription page.

The Endocrine Society's homepage features two news sections, one of news in the general media, the other of updates within the society itself. Also available from the homepage is information on the society's annual meeting, other society events, and related external events. Visitors can also select a quick link to The Hormone Foundation, the public education affiliate of the society, which offers basic information about the endocrine system, its function, and its associated diseases and disorders.

In the Press Room portion of the site is information on the America Weighs In campaign. This program focuses on educating the media, policy makers, and the general public about the role that endocrinologists play in researching and treating obesity. The Press Room also features a link to *The Endocrine Edge*, a free monthly online newsletter geared toward the public with the latest news from the society and the field of endocrinology.

The Society for Endocrinology site, <http://www.endocrinology.org/>, provides information about the Bristol, England-based organization and its programs. The society is affiliated with five journals, all accessible from a page on the website. The society also publishes a free quarterly newsletter, *The Endocrinologist*, which contains society news, general news, and feature articles.

The website also offers listings of grants and fellowships, society conferences, training courses sponsored by the society, and a calendar of events. The society sponsors a number of travel grants and has five research grant programs. There is also a page on books of interest to those in the field, which includes ordering information and short descriptions.

In 1997, the Society for Endocrinology established a committee for endocrinology nurses. This committee organizes conferences and an annual training course, and publishes the quarterly *Endocrine Nursing News* newsletter with reports from members and meeting notes. Past issues are available on the society website through the Endocrine Nurses link. Another subgroup are the Young Endocrinologists. Formed to support endocrinologists for up to six years after they receive their Ph.D., this group runs educational courses, provides career advice, and organizes special sessions at the Society of Endocrinology and British Endocrine Society meetings. —Erin E. Dooley



Taiwan Touts Trash Sorting

Taiwan, with the acreage of Belgium but twice the population, has 200 landfills. In two years these will be full, leaving the island nation dependent on some 20 trash incinerators that emit pollutants such as dioxin. To help curb the flow of waste into the incinerators, new recycling laws have been enacted that fine residents almost US\$200 for not sorting their trash properly.



The laws, now in force only in Taipei, will be implemented across Taiwan by January 2006 in an effort to cut the number of trash incinerators to five within 20 years. Over 90% of Taipei residents are reportedly complying with the new rules.

Pandemic Prevention

Officials from 192 countries agreed upon revised regulations for notifying the WHO of all major disease outbreaks and suspected bioterrorism events at a May 2005 meeting. Until now, only outbreaks of cholera, plague, and yellow fever had to be reported to the organization. The regulations, which come into effect in 2007, also require that the WHO assist member countries in responding to such threats and in fostering greater international cooperation in outbreak response. The health ministers and other officials who signed the regulations hope the new system will help contain outbreaks of infectious diseases such as SARS and influenza before they spread globally.

Less Gummy Gum

There's no doubt about it: chewed chewing gum is hard to clean up if it ends up anywhere except in a trashcan. In the United Kingdom alone, over US\$260 million is spent each year by municipalities on gum cleanup, and the methods used include abrasive chemical cleaners, pressure washing, and scraping. Now the University of Manchester in England and the company Green Biologics are developing a biologically based cleaner, TP-GUM™, that is cost-effective and nontoxic. The new product, which uses enzymes to break down the chemical structure of chewing gum at low temperatures and pressure, is easier to use and less damaging to surfaces than conventional gum cleanup methods.

